

## AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

*Please replace the paragraph extending from p. 30, line 20 through p. 31, line 16 with the following replacement paragraph:*

One example of a device structure according to the instant invention is shown in Fig. 4. Fig. 4 shows a cross-sectional view of a three terminal device structure. The three terminals are labeled T(1), T(2), and T(3). A plurality of these devices was formed on a 6" silicon wafer. The devices and layers on the wafer were formed using conventional sputtering, chemical vapor deposition, etching, and lithography techniques. The structure includes a silicon wafer substrate 310, a thermal oxide layer 320, a bottom terminal 330 that includes a conductive layer 340 formed from TiW or a combination of Ti and TiN and a carbon barrier layer 350, an SiO<sub>x</sub>/SiN<sub>x</sub> insulating region 360, an intermediate terminal 370 formed from TiW, a pore filled with a chalcogenide material 380, a top terminal 390 that includes a carbon barrier layer 400 and a conductive layer 410 that includes Ti and TiN, and an Al layer 420. In this example, the chalcogenide material 380 is Ge<sub>2</sub>Te<sub>2</sub>Sb<sub>5</sub> and is labeled GST in Fig. 3 Fig. 4. The barrier layers inhibit diffusion and electromigration of material into the chalcogenide region and improve the cycle life of the device. Typical layer thicknesses are as follows: conductive layer 340 (100 nm), barrier layer 350 (30 nm), intermediate terminal 370 (10 – 40 nm), barrier layer 400 (100 nm), and conductive layer 410 (100 nm). The pore region occupied by the chalcogenide material in device of this example is cylindrical with a height of approximately 0.1 micron and a diameter of about 1 micron. The terminals 330, 370 and 390

are in electrical communication with the chalcogenide. The intermediate terminal **370** circumscribes the chalcogenide material **380**. The terminals are separated by an insulating material so that electrical communication between terminals occurs through the chalcogenide material.

## **AMENDMENTS TO THE DRAWINGS**

Applicant has submitted an amended version of Fig. 1 and encloses a replacement sheet therefor. The amended version differs from the original version only through the inclusion of a reference line connecting label “60” to the indicated reset point that it references.